

REMARKS

Upon entry of the amendment, which is respectfully requested, claims 1-8 are all the claims pending in the application. Claims 6-8 are withdrawn from consideration as being directed to non-elected invention. Amendments are made to correct typographical errors in the claims and no new matter is introduced.

Affirmation of Election of Group I

At the outset, as requested by the Examiner, Applicants affirm the election of Group I, claims 1-5.

Response to Objections to the Claims

In the Office Action, claim 2 is objected to as being of improper dependent form. In response, claim 1 is amended to correct term “250 mg/L or higher” to read “250 mg/L or lower.” The amendment may be supported by the disclosure of the specification, at page 3, lines 7-15 and page 19, lines 2-19 as well as the priority document of Japanese application No. 2003-394220, we note that claim 1 of the instant application contains a typographical error.

In the Office Action, claim 3 is objected to as being in improper Markush claim. In response, claim 3 is amended as kindly suggested by the Examiner.

Response to Rejections to the Claims

In the Office Action, claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita (U.S. Pat. No. 5,677,075; “Fujita”).

Claims 4-5 are rejected under 35 U.S.C. § 103 as being obvious over Fujita in view of O'Rell et al. (U.S. Pat. No. 4,216,281; “O'Rell”).

The detailed explanations of Fujita and O'Rell as well as the rejection grounds are provided on pages 3-5 of the Action, which are not repeated herein for the purpose of brevity.

Applicants respectfully disagree with the rejection for the following reasons.

Fujita teaches an addition of an aqueous suspension of carbon to a lead battery and the suspension is prepared by means of electrochemical oxidation in water using carbon as a positive electrode. During the electrochemical oxidation, pH changes from neutral to the range of 2 to 3. Fujita states that carbonyl group, carboxyl group, or hydroxyl group is formed on the surface of carbon.

The Office admits that Fujita does not specifically teach the content of the volatile organic acid is equal to 250 mg or lower (as amended) as recited in claim 1 of the instant application, but asserts that the lead-acid battery of Fujita would meet the above limitation because the electrolyte solution starts as a water with a pH of 7 and through the presence of carboxylic acid (HCOOH) drops down to a pH of 2-3, and therefore a significant amount of carboxylic acid per liter of water would be required to lower the pH to such a degree. Page 4, lines 4-10 of the Office Action.

Applicants note that Fujita reports that the pH of the electrolyte changes from 7 to 2-3. It appears to Applicants that the Office considers that an organic acid is formed and, as the result, an organic acid is added to a lead battery. However, contrary to the Office's understanding that such change is caused by the presence of carboxylic acid (impliedly "volatile carboxylic acid"), the pH of the electrolyte of Fujita changes due to the carboxyl group (-CO-O-) attached to carbon surface, which was formed through electrolysis of pure water or tap water. See, Example 1, column 10, line 21- column 11, line 3. As the Office correctly admits, Fujita fails to disclose the formation of a (volatile) organic acid. Also, even if assuming that the above functional group is introduced onto the surface of carbon in Fujita, it is too speculative to reach a conclusion that the

electrolyte contains a “volatile” organic acid. One skilled in the art would not be able to specify the feature of claim 1 only from the range of pH 2 to 3 as taught by Fujita.

Furthermore, the Office asserts that the claimed invention is anticipated because a significant amount of carboxylic acid per liter of water would be required to lower the pH of the electrolyte to 2-3 and conclude that the electrolyte of Fujita *necessarily* “contains a volatile organic acid of 250 mg/L or lower.” (Emphasis added.)

However, Applicant respectfully submits that such assertion is purely speculative and purely based on possibility. Also, even if assuming that the electrolyte of Fujita contains a volatile carboxylic acid to lower the pH to 2-3 after electrolysis, there is no teaching in Fujita of the specific amount of the acid (there cannot be such teaching because Fujita does not teach adding a volatile organic acid to the electrolyte) and the Office does not provide adequate evidence or scientific reasoning supporting the assertion that the electrolyte of Fujita must (or necessarily) contain a volatile organic acid of 250 mg/L or lower. The law of inherent anticipation prevents the Examiner from relying on probabilities or possibilities, and the rejection is not sustainable. *See In re Oelrich*, 666 F.2d 578, 581 (CCPA 1981) (“The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”). *See also Ex parte Skinner*, 2 USPQ2d 1788, 1789 (BPAI 1986) (“[T]he examiner must provide some evidence or scientific reasoning to establish the reasonableness of the examiner’s belief that the functional limitation is an inherent characteristic of the prior art” before the burden is shifted to the applicant to disprove the inherency).

Furthermore, the Office asserts that, alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the amount of carboxylic acid in the battery of Fujita because the acidity of the electrolyte affects the

conductivity of the battery; and discovery of an optimum value of a result effective variable involves only routine skill in the art.

However, it appears to us that the Office mischaracterize the description of the Fujita. The portion cited by the Office teaches that water (i.e., electrolyte) may contain an acid component to give water conductivity, but not teach that the amount of a volatile organic acid is a result-effective-variable in terms of increasing performance or capacity of the lead-acid battery.

Furthermore, Applicants respectfully submit that one skilled in the art would not be motivated to add a volatile organic acid to an electrolyte of a lead-acid battery because a volatile organic acid contained in the electrolyte was considered to be harmful to lead-acid battery. *See*, page 8, lines 13-16 of the specification.

As a primary reference Fujita fails to teach all and every element of claim 1 and O'Rell also fails to fill the gap, we believe that the rejection is not sustainable.

Accordingly, Applicants respectfully submit that the rejections are not sustainable and withdrawal is respectfully requested.

CONCLUSION

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number at **202-775-7588**.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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